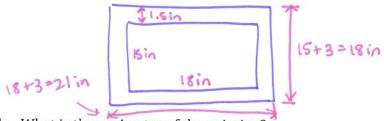
# **Team Problems for Chapter 2**

Name: _	Solutions	
Date:		

Spring 2017

## Problem #1: Perimeter and Area

- 1. The owner of an art framing store recommends using a flat frame that is 1.5 inch wide to frame a painting that is 15 inches by 18 inches.
  - a. Draw a picture (not necessarily to scale) of the painting and its frame.



b. What is the perimeter of the painting?

c. What is the perimeter of the outside edge of the frame?

d. What is the area of the front part of the frame (without the picture)?

= Area of picture + frame - Area of picture  
= 
$$18 \times 21 - 15 \times 18 = 108 \text{ in}^2$$

### Problem #2: True/False Problems

Fill in the blank next to each of the following statements with "T" for True and "F" for false. If the statement is true, explain why it is true or give an example. If the statement is false, give a counterexample.

Remember! If a statement is only sometimes true, then it is FALSE.

<u>T</u> 1.	If a number is divisible by 4, then it is divisible by 2.  Divisible by 4 means it can be divided twice by 2.
<u>F</u> 2.	Two nonparallel lines intersect in one point.
<u>F</u> 3.	Only if they are coplanar - skew lines are nonparallel and the city of Portland is in Oregon.
<u>F</u> 4.	Portland could refer to Portland, Maine Obtuse angles measure 130°.
<u>T</u> 5.	An angle measuring 150° is also obtue.  An angle that measures 92° is obtuse.
<u>T</u> 6.	This angle measures 790°.  If a month begins with the letter M, then the month has 31 days.

May & March both have 31 days.

### Problem #3: Laws of Deductive Reasoning

Tracy lives in the Bronx.

If it is possible, use the Laws of Deductive Reasoning to draw conclusions from the following statements, and state which law you are using. If it is not possible to draw a conclusion, tell why.

If you live in the Bronx, then you live in New York.

Tracy lives in New York -> Law of Detachment 2. If you are a high school student, then you like art.

Cannot make a conclusion. Art lovers are not necessarily Hs students by this statement.

3. If you improve your vocabulary, then you will improve your score on a standardized test. If you read often, then you will improve your vocabulary.

If you read often, then you will improve your score on a standardized test. -> Law of Syllogism

4. If a whole number ends in 6, then it is divisible by 2. If a whole number ends in 4, then it is divisible by 2.

Cannot make a conclusion. One would need to start up conclusion of the other in order to use the Lawof Syllogism.

# Problem #4: Writing Conditional Statements

Write the converse, inverse, and contrapositive of the conditional statements:

"If two segments are congruent, then they have the same length."

If you lose, then I don't win.

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Converse: If two segments have the same lengths, then they are congruent.
Inverse: If two segments are not congruent, then they do not have the gameleng
Contrapositive:  If two segments do not have the same length, then they are not congri
b. "If I win, then you don't lose."
Converse: If you don't lose, then I win.
Inverse: If I don't win, then you lost.
Contranceitivo

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### Team Problems for Chapter 2

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### **Problem #5: More Writing Conditional Statements**

- 1. Write the following well-known quotations as conditional statements (in "if-then" form).
- a. Mark Twain wrote, "If you tell the truth, you don't have to remember anything."

If you tell the truth, then you don't have to remember anything.

b. Helen Keller wrote, "One can never consent to creep when one feels the impulse to soar."

If one feels the impulse to soar, then one cannot consent to creep.

c. Mahatma Ghandi wrote, "Freedom is not worth having if it does not include the freedom to make mistakes."

If freedom does not include the freedom to make mistakes, then it is not worth having.

d. Benjamin Franklin wrote, "Early to bed and early to rise makes a man healthy, wealthy, and wise."

he will be healthy, wealthy, and wise.